

# Inequalities

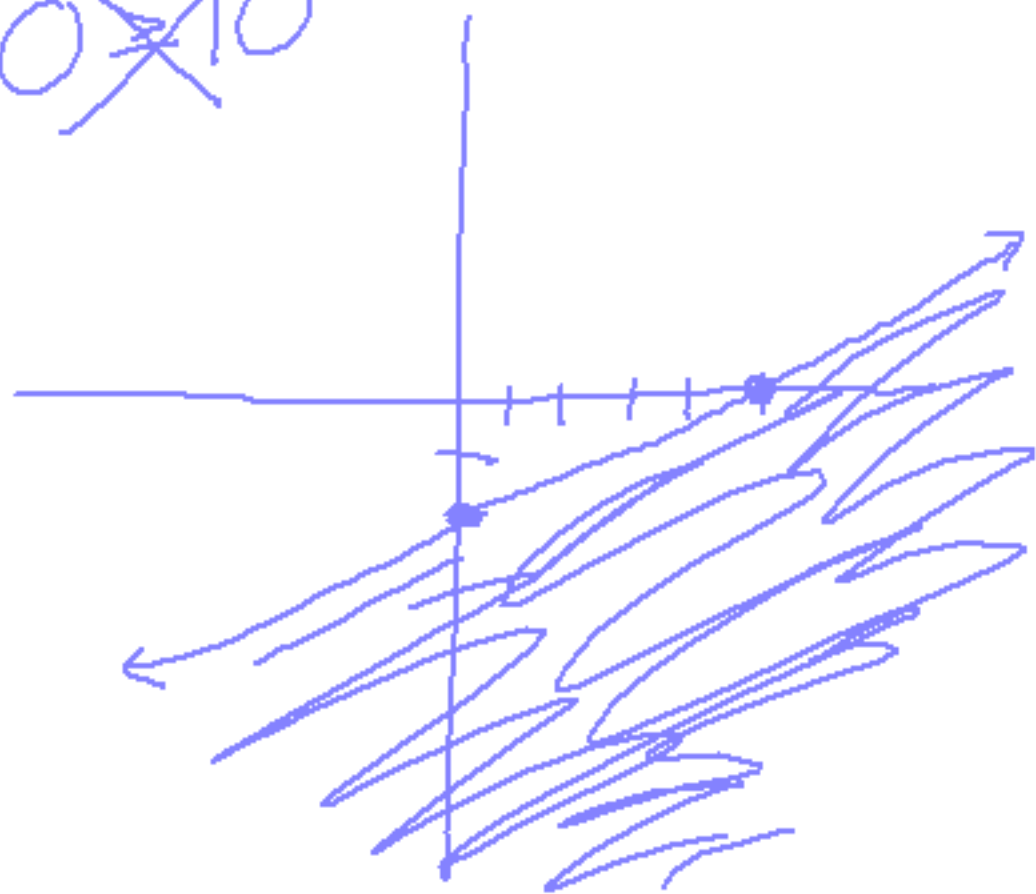
①  $2x - 5y \geq 10$

①  $2x - 5y = 10$

Dashed =  $>$ ,  $<$

Solid =  $\geq$ ,  $\leq$

- ② test a point  
not on the line  
easiest:  $(0,0)$   
then shade the  
appropriate side



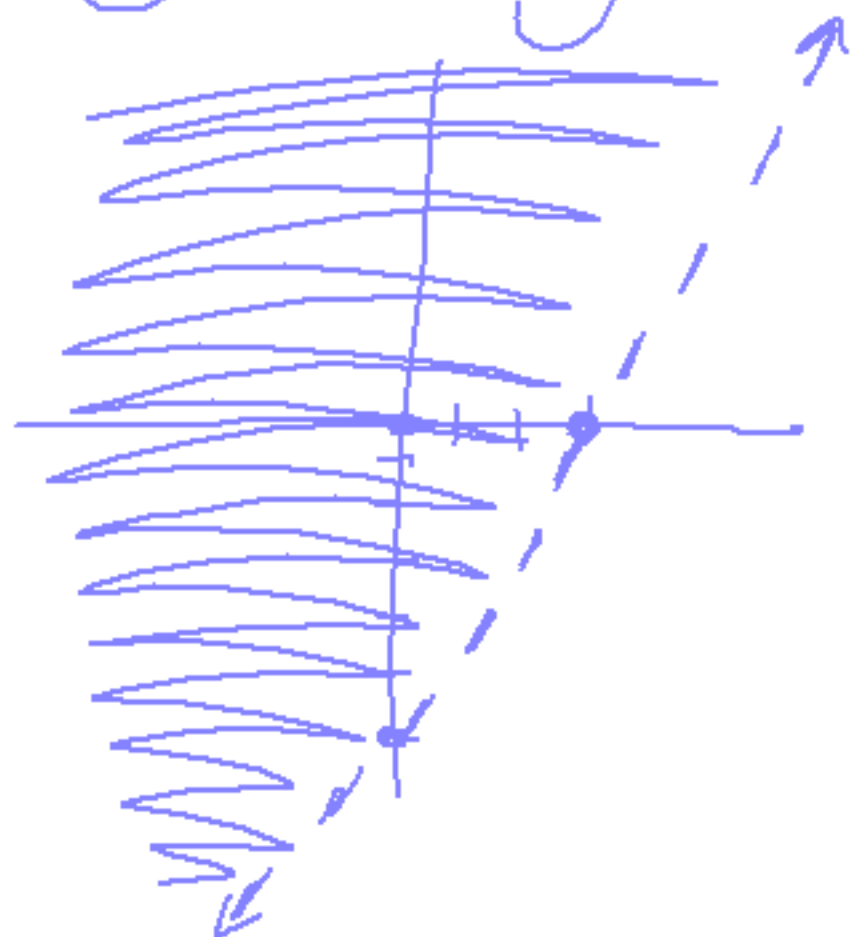
$$\textcircled{2} \quad 2x - y < 6$$

$$0 < 6$$

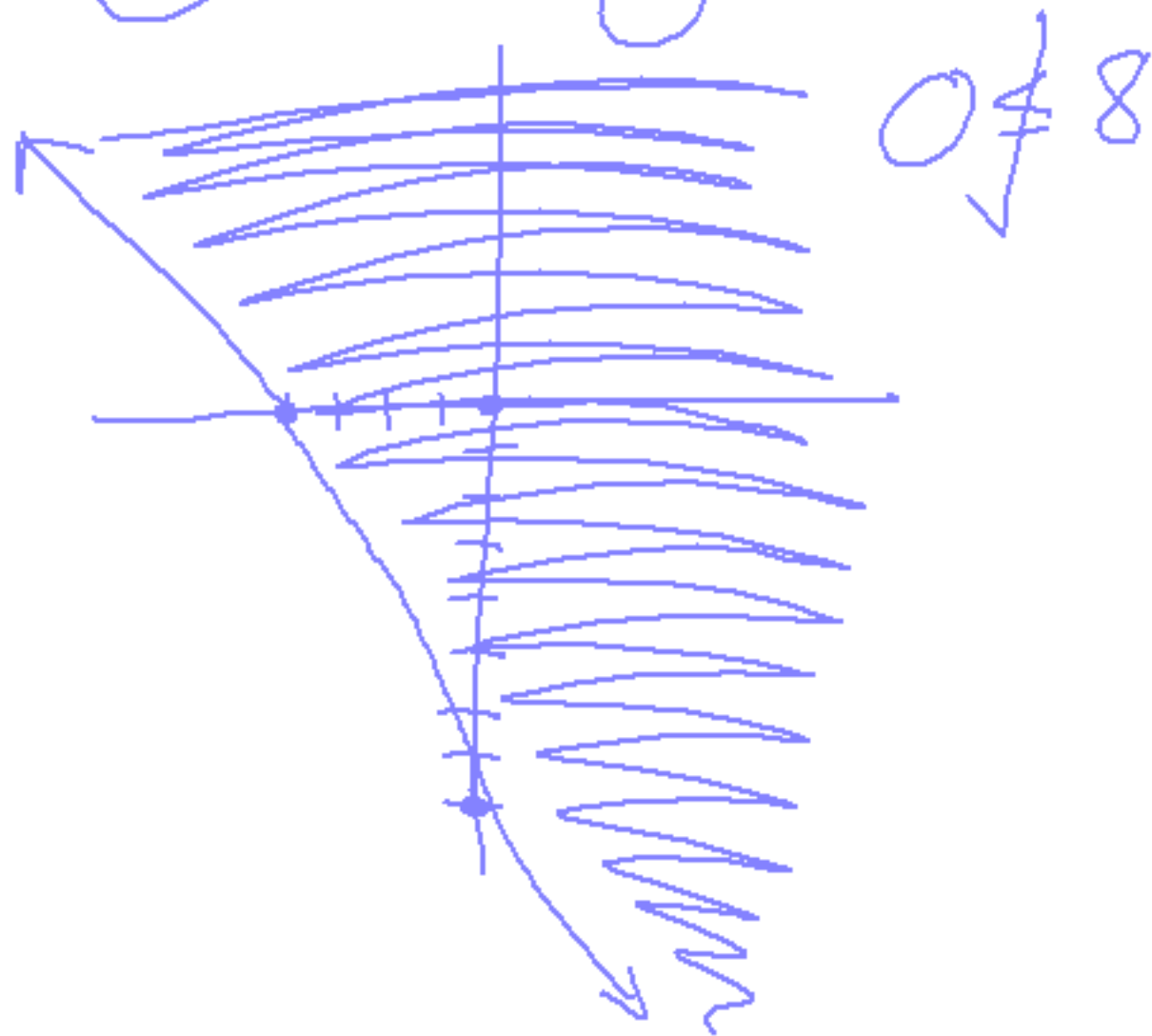
$$-y < -2x + 6$$

$$y > 2x - 6$$

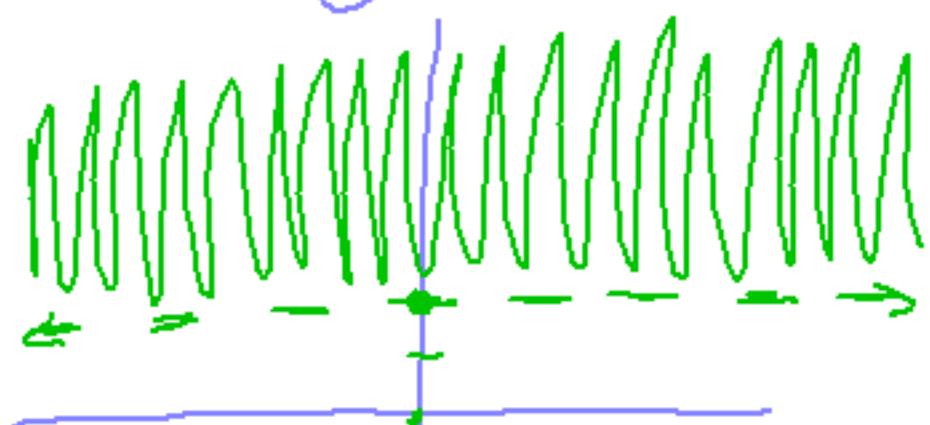
$$0 > -6$$



③  $-2x - y \leq 8$

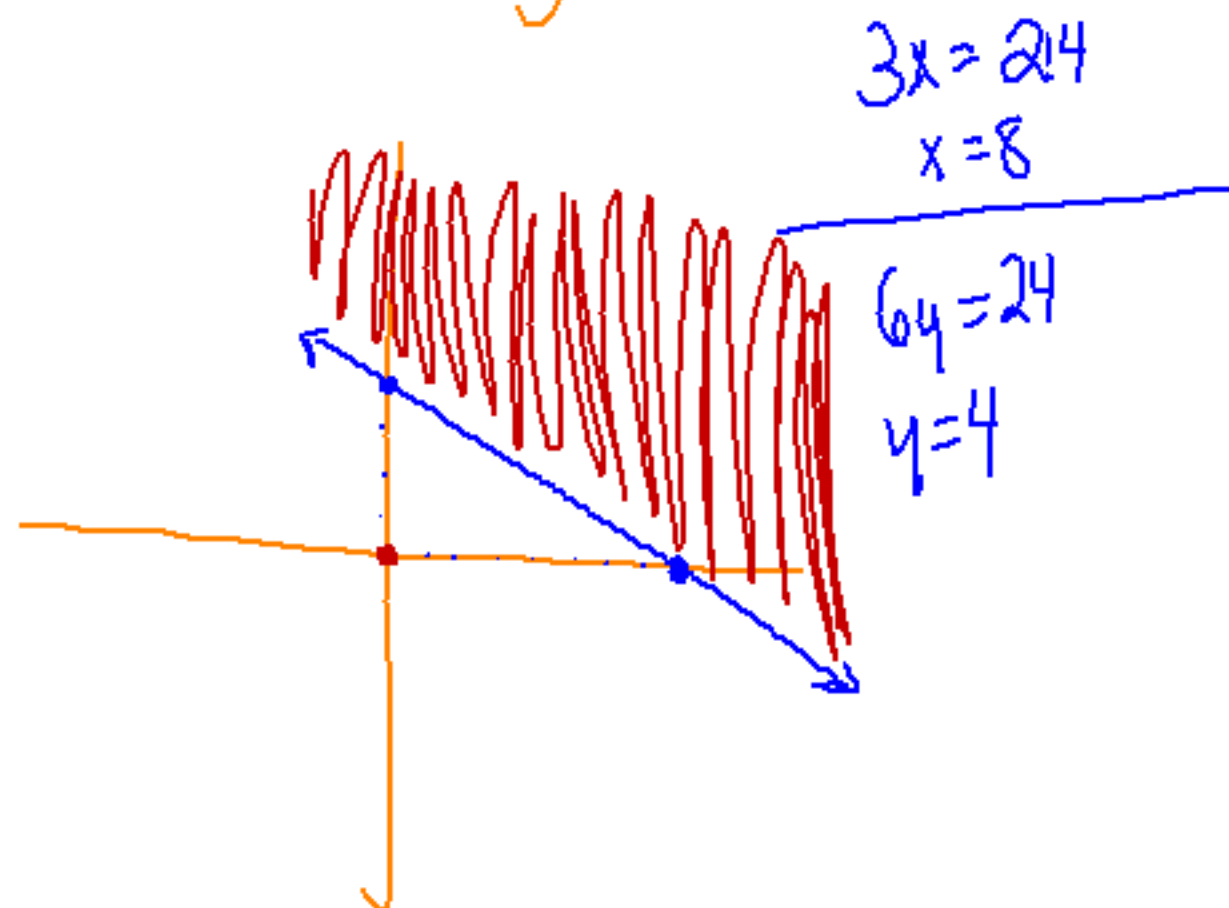


$$\textcircled{4} \ y > 2$$



$$0 < 2$$

$$\textcircled{5} \ 3x + 6y \geq 24$$

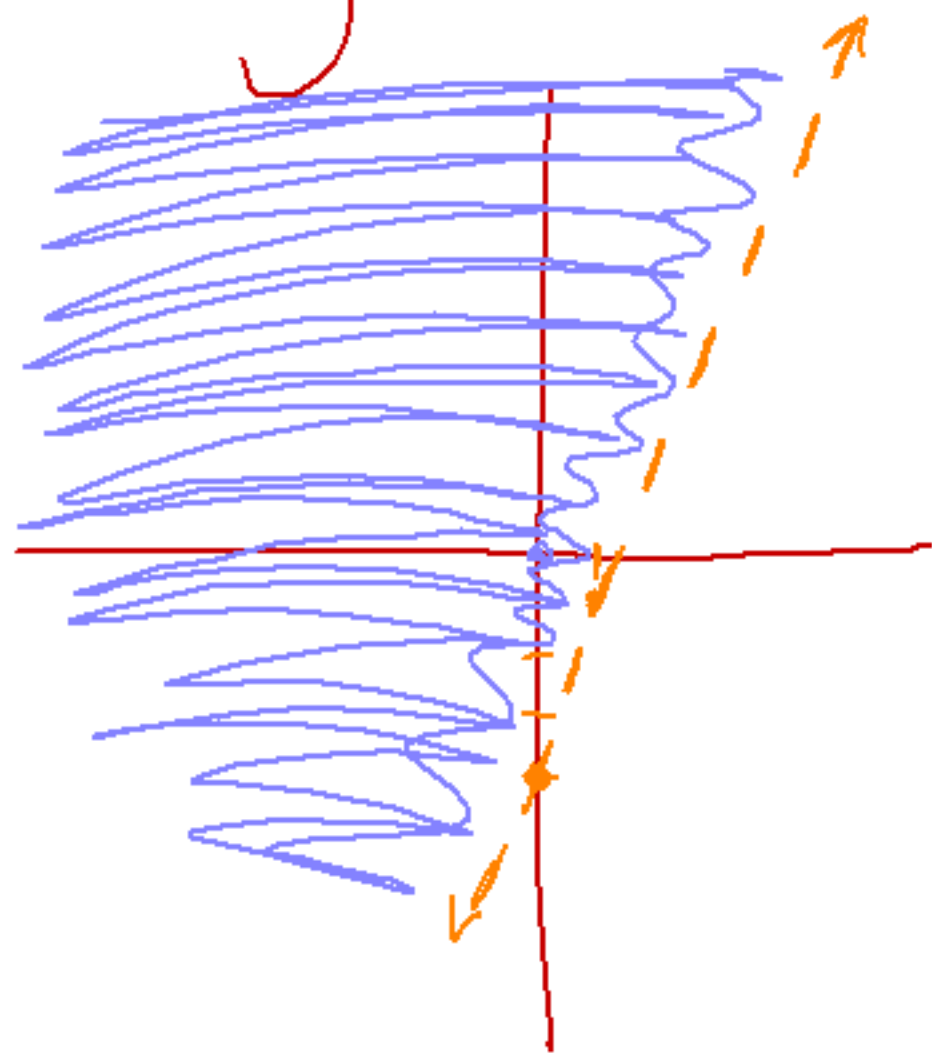


$$0 + 0 \geq 24$$

$$0 < 24$$

TRY THESE

①  $y > 3x - 4$

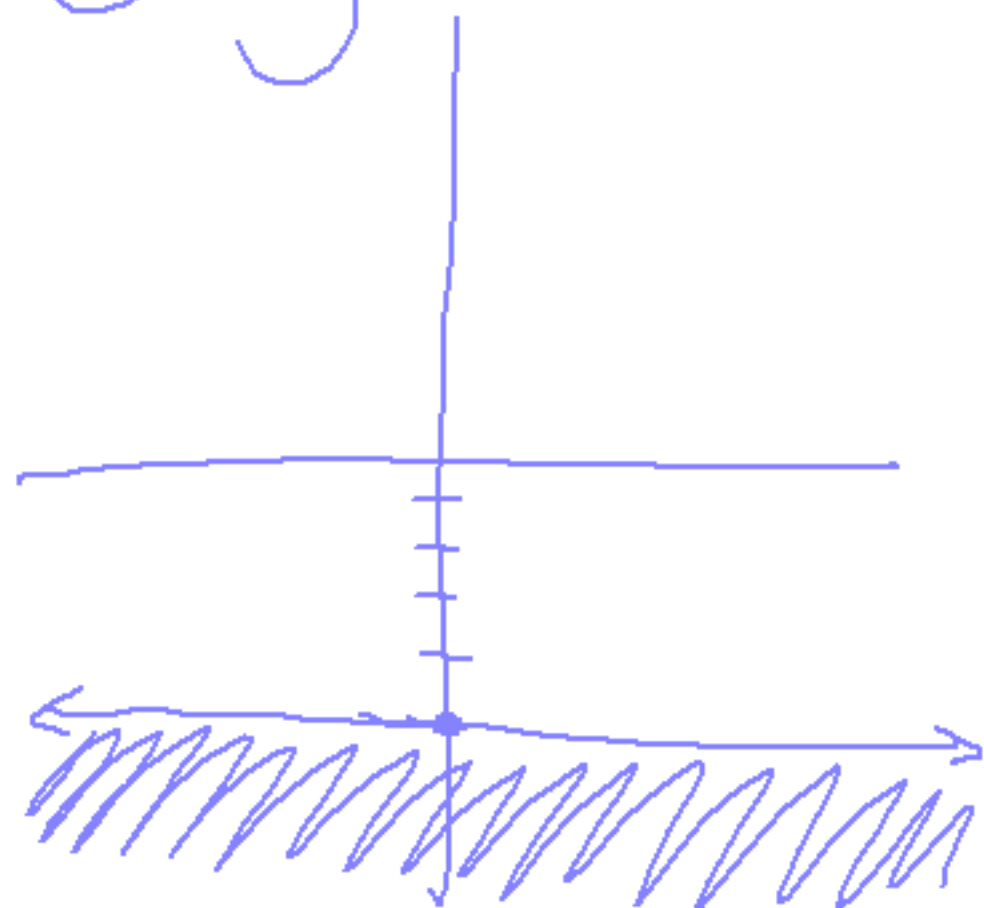


$$\begin{aligned}\text{slope} &= \frac{3}{1} \\ \text{x-int} &= \left(\frac{4}{3}, 0\right) \\ \text{y-int} &= (0, -4) \\ \text{test pt} &= (0, 0)\end{aligned}$$

$$0 > 0 - 4$$

$$0 > -4$$

②  $y \leq -5$



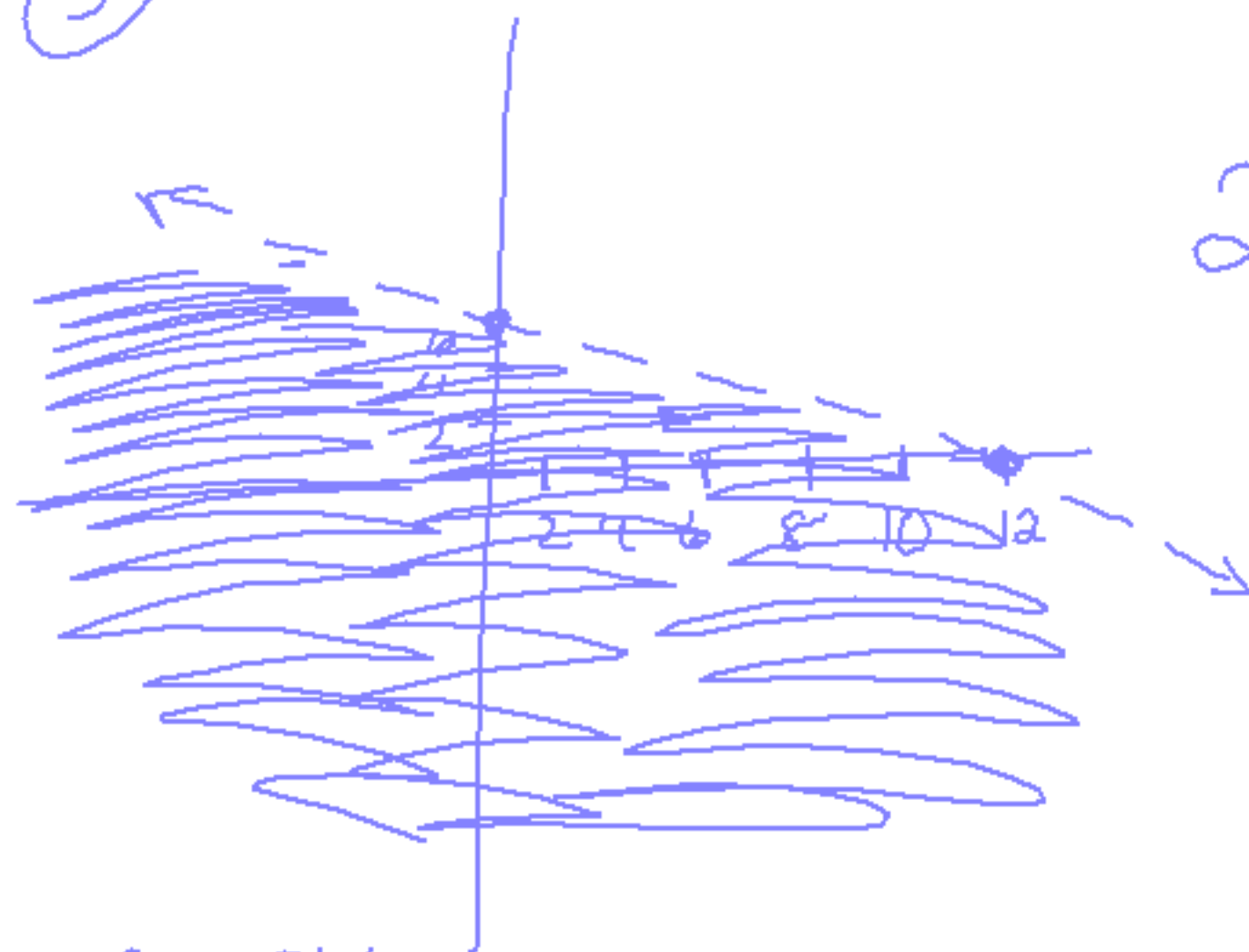
slope = 0

y-int = (0, -5)

x-int = none

test: (0, 0)

③



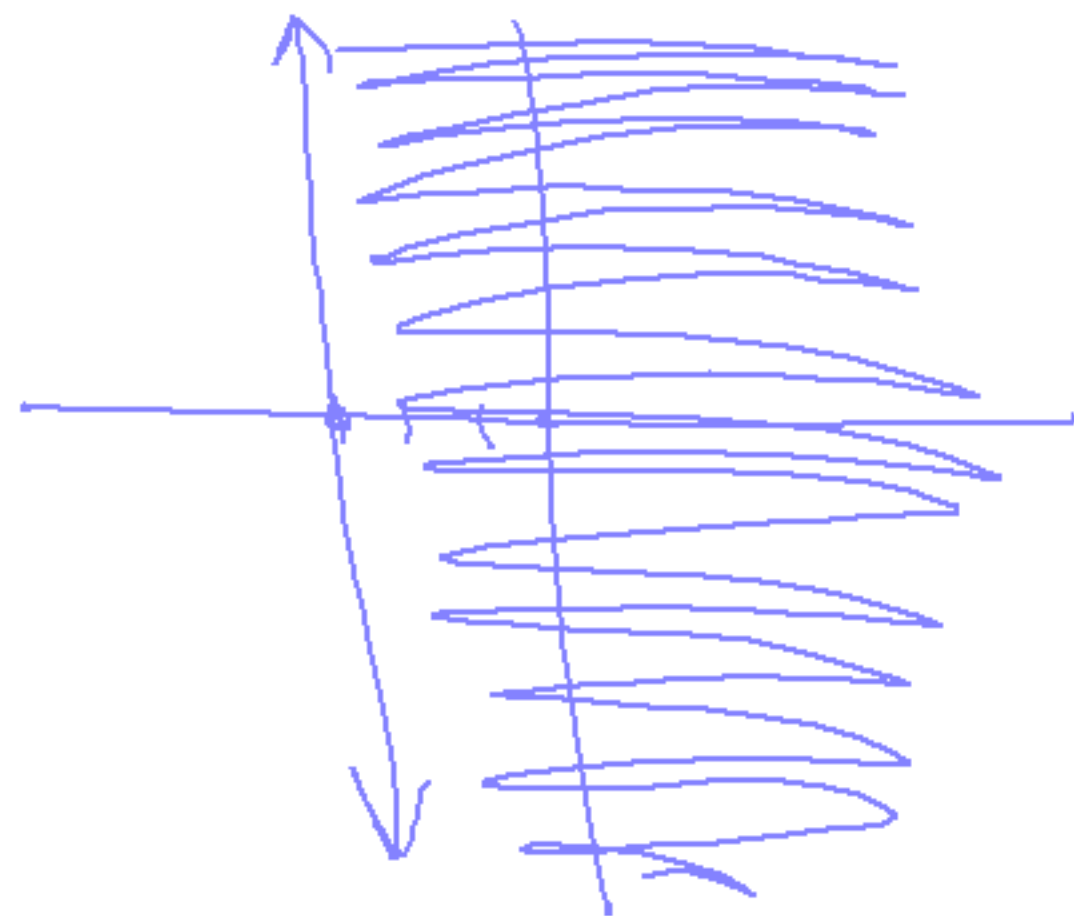
$$2x + 4y < 24$$

$$m = -\frac{1}{2}$$

$$x\text{-int: } (12, 0)$$

$$y\text{-int: } (0, 6)$$

④  $\frac{2x}{2} \geq \frac{-6}{2}$   
 $x \geq -3$



slope = undefined  
x-int = (-3, 0)  
y-int = none

$$4y > 16$$



Practice

③  $3x - y > 4$

$\left(\frac{4}{3}, 0\right)$

$$3\left(\frac{4}{3}\right) - 0 > 4$$

$$4 - 0 > 4$$

$$4 > 4$$

NO